Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6284/2019/1
Works approval holder	Robe River Mining Co. Pty Ltd
ACN	008 694 246
Registered business address	Level 18, Central Park 152-158 St Georges Terrace Perth WA 6000
DWER file number	DER2019/000437
Duration	09/09/2020 to 08/09/2023
Date of issue	**08/09/2020**
Premises details	Mesa A/ Warramboo Iron Ore Mine ML248SA L08/77

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	35,000,000 tonnes per annual period
Category 6: Mine dewatering	7,000,000 tonnes per annual period
Category 64: Class II or Class III putrescible landfill site	1,000 tonnes per annual period
Category 73: Bulk storage of chemicals etc.	620 m^3 in aggregate (below threshold currently)

This works approval is granted to the works approval holder, subject to the attached conditions, on 8 September 2020, by:

Alana Kidd

Digitally signed by Alana Kidd
Date: 2020.09.08 11:53:15 +08'00'

Alana Kidd
Manager, Resource Industries
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Interpretation

In this works approval:

(a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline or code of practice in this works approval means the version of the standard, guideline or code of practice in force at the time of granting of this works approval and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the works approval;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location; and

(d) within the corresponding timeframe,

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Ore Processing Facility (OPF)	• Two ore transfer points: one to divert ore from the existing TLO feed conveyor; return wet material to the TLO feed conveyor; • Surge bin equipped with an insertable type dust collector at the top of the bin structure; • Load points from the surge bin onto each conveyor installed with skirts and covers to reduce spillage • Wet scrubbing and screening; • Conveyors for transportation of ore between facilities; • Flocculant mixing plant including a flocculant silo, a mixing tank, a storage tank and flocculant dosing pumps; • Dust suppression sprays on surge bin load points; • Hydrocarbon facilities designed in accordance with *Australian Standard 1940- 2004: Storage and handling of flammable and combustible liquids;* and • Waste fines thickener	ML248SA As per Figure 2
2.	Ore Processing Facility - Spill/ drainage controls	• Concrete hardstand bunding at the flocculant dosing pumps; • Concrete hardstand bunding located by grey shaded areas in Figure 2 of Schedule 1 • Earthen pad outside bunded compounds graded to direct stormwater flow to the south west of the pad where sediment is contained by the adjacent access road; • Access roads bunded to direct uncontaminated stormwater around the perimeter of the OPF; • Drive- in sumps with concrete lined drying pads and water recycled to sumps, to be designed as per Figure 3 and Figure 4 in Schedule 1; and • Emergency dump pond with a capacity of 5.9 ML located as per Figure 2 of Schedule 1.	ML248SA OPF general layout as per Figure 2 Indicative drive-in sump locations as shown in Figure 5 of Schedule 1
3.	Waste fine delivery pipeline from Mesa A to Warramboo WFSF	• Secondary containment for tailings distribution pipeline located on mine access roads bunded with a windrow on one side; • Pressure/flow gauges to be included on the tailings distribution pipeline to identify loss of flow; • Scour valves and sumps to be installed at low points of the tailings distribution pipeline within the bunded corridor to allow for draining of the pipeline prior to inspection;	As per Figure 6 and Figure 8 in Schedule 1 Figure 6

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		• Drains to be located at low points along the pipeline(approximately every 1 km); • Scour pits sized for 15 minutes of the design flow (515m^3/ hr) with some additional storage capacity; and • Flowmeters installed at the discharge point of the wet plant pumps and the booster station pumps. The line will be fitted with pressure transmitters at both pump stations and at the burst disc locations. Pumps to be interlocked with these instruments. Bolted connections will be included in the pipeline to allow for disconnection and internal inspection.	
4.	Dewatering pipeline and discharge point	• Secondary containment provided for dewatering pipeline via windrow on outside of pipeline route. The pipelines to be located alongside access roads; • Flow meter to be installed at the discharge point; • Rip rap apron installed at the discharge point in accord with design as shown in Figure 10 of Schedule 1; and • Rip rap protection to be installed within the portion of the creek bed deemed susceptible to erosion as per design in Figure 10 of Schedule 1.	L08/177 (pending) As per Figure 9 and Figure 10 in Schedule 1
5.	Landfill facilities	Landfill facilities maximum capacity of <1,000 tonnes per annum with the following location requirements: • Located within Prescribed Premises boundary; • Located at least 100 m from any permanent or perennial watercourse; and • Located so that vertical distance between the waste and the highest seasonal and expected post mining ground water level is no less than 3 m (waste dump landfill) or 10 m (putrescible landfill). Landfill facilities will be have the following requirements: • Establishment of windrows to delineate the tipping area and allow access for authorised vehicles and personnel; • Installation of fencing with gates to the Putrescible landfills to restrict unauthorised access; • Signage will also be installed to indicate types of waste accepted for burial; and • Areas cleared only as required to reduce open areas.	ML248SA Location as per Figure 11 of Schedule 1
6.	Heavy Vehicle Refueling Facility (HVRF)	• Heavy vehicle refuelling bays with delivery pump and fuel arm to suit the HV fleet and associated bunds as per Australian Standard 1940-2004 (AS 1940-2004): The storage and handling of flammable and combustible liquids; • Drainage from pad directed to an oily water separator (OWS) which discharges to a HDPE lined evaporation pond; • 2 x 220 kL above ground self bunded fuel storage tanks; • Concrete hardstand installed at the heavy vehicle refuelling facility road tanker unloading pad, heavy vehicle refuelling bay, light vehicle refuelling bay and the pump station bunded areas; • Potentially contaminated surface water to be collected in sumps and directed to the OWS. The OWS to be able to treat hydrocarbon wastewater to achieve a concentration of TRH (total recoverable hydrocarbons) of <15mg/L	As per Figure 12 and Figure 13 in Schedule 1

2. The works approval holder must:

(a) construct the critical containment infrastructure;
(b) in accordance with the corresponding design and construction requirements;
(c) at the corresponding infrastructure location; and
(d) within the corresponding timeframe

as set out in Table 2.

Table 2: Critical containment infrastructure design and construction requirements

	Infrastructure	Design and construction requirements	Infrastructure location	Timeframe
1.	WFSF Pit 1/2	• 0.5m deep approximately 20m wide WFSF Pit 1/2 emergency spillway located at the north- western end of Pit 1/2 • Emergency spillway invert level will be at 54.5m RL; • Spigot deposition points to be located as per Figure 14Figure 8 in Schedule 1; • Supernatant (decant) pond pontoon-mounted pump system; • Perimeter bund to be installed around the WFSF to divert stormwater away from the facility as per the detail in Figure 14 in Schedule 1.	Schedule 1; Maps, Premises Map Figure 6 and Figure 7 Schedule 1: Maps, Figure 11	Prior to the submittal of the Environmental Compliance Report required by condition 6
2.	WFSF Pit 3		Schedule 1; Maps. Premises Map Figure 6 and Figure 7	Prior to the submittal of the Environmental Compliance Report required by condition 6

3. The works approval holder must design, construct and install 4 new groundwater monitoring bores in accordance with the requirements specified in Table 3.

Table 3: Installation of groundwater monitoring bores

Infrastructure	Design, construction and installation requirements	Monitoring bore location	Timeframe
Groundwater monitoring bores	Four new groundwater monitoring bores to be installed to monitor for SWLs and water quality: • Well screens must target the part, or parts, of the aquifer most likely to be affected by contamination1. Where temporary/seasonal perched features are present, wells must be nested, and the perched features individually screened; • Designed and constructed in accordance with ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores; and • A bore location map (using aerial image overlay) must be prepared and include the location of all monitoring bores in the monitoring network and their respective identification numbers.	Schedule 1: Maps, Premises map, Figure 15	Must be constructed, developed (purged) and determined to be operational no later than 60 calendar days prior to the commencement of the environmental commissioning under condition 8

Note 1: Refer to Section 8 of Schedule B2 of the *Assessment of Site Contamination NEPM* for guidance on well screen depth and length.

4. The works approval holder must, within 60 calendar days of the monitoring bores in Table 3 being constructed, submit to the CEO a bore construction report evidencing compliance with the requirements of condition 3 and depicting the bore locations.

5. The works approval holder must within 60 days of the monitoring bores in Table 3 being constructed, conduct baseline sampling in accordance with Section 8.2.3.5 of *National Environment Protection (Assessment of Site Contamination) Measure* 1999 (NEPM, 1999) for parameters outlined in Schedule 2: Monitoring.

Compliance reporting

6. Subject to condition 1, within 28 days of the completion of the works specified in Table 1, the works approval holder must submit to the CEO an Environmental Compliance Report certified by a suitably qualified professional engineer that:

(a) lists and describes the completed works and any associated items of infrastructure and equipment listed in Table 1;

(b) certifies whether or not each item of infrastructure or component of infrastructure specified in Table 1 has been constructed with no material defects and to the requirements specified in Table 1;

(c) contains 'as constructed' plans for each item of infrastructure or component of infrastructure specified in Table 1; and

(d) is signed by a person authorised by the works approval holder and contains the printed name and position of that person within the company.

7. Subject to condition 6, where an item of infrastructure or component of infrastructure has been certified as not being constructed, or does not comply with the corresponding requirements, or contains material defects, the works approval holder must:

(a) correct the non-compliant or defective works, prior to re-certifying in accordance with condition 6(b); or

(b) provide to the CEO a description of, and explanation for, any departures from the requirements specified in Table 1 that do not require rectification and do not constitute a material defect along with the report required by condition 6.

8. Subject to condition 2, within 30 days of the completion of the works specified in Table 2, the works approval holder must submit to the CEO a Critical Containment Infrastructure Report certified by the Tailings Design Engineer or their delegate that:

(a) lists and describes the completed works and any associated items of infrastructure and equipment listed in Table 2;

(b) certifies whether or not each item of infrastructure or component of infrastructure specified in Table 2 has been constructed with no material defects and to the requirements specified in Table 2;

(c) contains 'as constructed' plans for each item of infrastructure or component of infrastructure specified in Table 2; and

(d) is signed by a person authorised by the works approval holder and contains the printed name and position of that person within the company.

9. Subject to condition 8, where an item of infrastructure or component of infrastructure has been certified as not being constructed, or does not comply with the corresponding requirements, or contains material defects, the works approval holder must:

(a) correct the non-compliant or defective works, prior to re-certifying in accordance with condition 8(b); or

(b) provide to the CEO a description of, and explanation for, any departures from the requirements specified in Table 2 that do not require rectification and do not constitute a material defect along with the report required by condition 8.

Ambient groundwater monitoring

10. The ambient groundwater monitoring required under condition 5 must be undertaken in accordance with condition 20.

Environmental commissioning phase

Environmental commissioning requirements

11. Table 4 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 6 of this works approval.

12. The works approval holder may only commence environmental commissioning of an item of infrastructure identified in condition 2:

(a) once the Environmental Compliance Critical Containment Infrastructure Report has been submitted for that item of infrastructure in accordance with condition 8 of this works approval; and

(b) the CEO has notified the works approval holder that the Critical Containment Infrastructure Report required by condition 8 meets the requirements of the works approval within 45 days.

13. Table 4 may only be carried out:

(a) in accordance with the corresponding commissioning requirements; and

(b) for the corresponding authorised commissioning duration.

Table 4: Environmental commissioning requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
Ore Processing Facility	Subject to completing the requirements of conditions 6 and 7	Stages 1 to 3: 180 calendar days Stages 4 to 6 (commissioning with ore): 120 calendar days
WFSF	Subject to completing the requirements of conditions 6, 8 and 9	14 calendar days
Tailings and decant water discharge pipelines	Subject to completing the requirements of conditions 6, 8 and 9	14 calendar days
Dewatering pipeline and discharge point for pit water discharge direct to Waramboo Creek (no tailings present)	Commissioning not required	Commissioning not required
Landfill facility	Commissioning not required	Commissioning not required
Heavy Vehicle Refueling facility	Commissioning not required	Commissioning not required

14. During environmental commissioning and time limited operations, the works approval holder must ensure that the emission(s) specified in Table 5, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 5: Authorised discharge points during commissioning and time limited operations

	Emission	Discharge point	Discharge point location
1.	Waste fines to WFSF Pit 1/2 and Pit 3	Pit 1/2 via one or more discharge points from spigots located around the pit perimeter	As per Figure 8 in Schedule 1
		Pit 3 *via one or more discharge points from spigots located around the pit perimeter*	

Environmental commissioning reporting

15. The works approval holder must submit to the CEO an Environmental Commissioning Report within 60 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 4.

16. The works approval holder must ensure the Environmental Commissioning Report required by condition 15 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes;

(b) a summary of the environmental performance of each item of infrastructure as constructed or installed;

(c) a review of the works approval holder's performance and compliance against the conditions of this works approval; and

(d) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration

17. The Works Approval Holder may conduct time limited operations for an item of infrastructure specified in condition 1:

(a) where the item of infrastructure does not require environmental commissioning, the Environmental Compliance Report as required by conditions 6 and 8 has been submitted by the works approval holder for that item of infrastructure; and

(b) where the item of infrastructure is authorised to undertake environmental commissioning under condition 11, the Environmental Commissioning Report for that item of infrastructure as required by condition 15 has been submitted by the works approval holder.

18. The works approval holder may conduct time limited operations for an item of infrastructure specified in Table 1 and Table 2 for a period not exceeding the number of calendar days specified in Table 6 from the day the works approval holder meets the requirements of condition 1 and 2, for that item of infrastructure.

Table 6: Duration of time limited operations

Infrastructure	Authorised time limited operation duration
Ore Processing Facility	180 calendar days
WFSF Pit 1/2 and Pit 3, including tailings deposition pipeline	180 calendar days
Dewatering pipeline and discharge point	180 calendar days
Landfill facility	180 calendar days
Heavy Vehicle Refueling facility	180 calendar days

19. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 7 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 7.

Table 7: Infrastructure and equipment requirements during time limited operations

	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	Ore Processing Facility	• Operate dust controls on transfer points to manage dust emissions; • Maintain and operate the oily water collection and treatment system; and • Capacity in sedimentation ponds/sumps/silt traps to be maintained; Sumps, emergency dump pond to be inspected within 24 hours of rainfall event. • Record volume of ore processed.	Schedule 1: Maps, Premises map, Figure 1 and Figure 2
2.	WFSF Pit 1/2 and Pit 3	• Freeboard adequate to store the 1:100 year 72-hour rainfall event (freeboard of 1.5 m to the emergency spillway level (54.5mRL)); and • Decant pumping system in pit 1/2 • Continuous volume of tailings discharged recorded and to location, while discharging.	Schedule 1: Maps, Premises map, Figure 6, Figure 7 and Figure 8
4.	Dewatering pipeline and discharge point	• Inspect the mine dewatering water pipeline daily, when discharging, to Warramboo Creek; • Inspect the discharge outlet daily, when discharging, for excessive scouring and make good repairs within 14 days of recording the maintenance request; and • Only discharge pit water from operational pit, no tailings decant is to be discharged to Warramboo Creek. • Continuous volume of dewatering discharge recorded and to location, while discharging.	Schedule 1: Maps, Premises map, Figure 9 and Figure 10
5.	Landfill facilities	• Waste disposed of to landfill facilities to be recorded; • Fencing at the putrescible landfill facilities will be regularly inspected for damage and cleared of waste; • Signage maintained which clearly defines what waste is accepted;	Schedule 1: Maps, Premises map, Figure 11

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		• Surface water management structures (i.e. bunding) will be maintained to divert surface water flows away from landfill facilities; • Bunding or sumps will collect any surface water that has come into contact with waste; • The tipping area of putrescible landfill facilities will not be greater than 30 m in length and 2 m above ground level height; • Waste in waste dump landfill facilities will be covered when required, to at least 200mm at final landform design; • Use of water trucks, control of vehicle movements / restricted speeds; and • weather forecasts will be monitored, with activities that have the potential to generate high dust levels restricted if adverse weather. Waste Dump Landfill waste acceptance criteria: • Clean fill; • Inert Type 1 waste (including conveyor belts, screen mats, concrete rubble and steel products); • Inert Type 2 waste (including tyres and plastics); and • Putrescible waste (wooden packaging and pallets only). Putrescible Landfill Facilities acceptance criteria: • Clean fill • Inert Type 1 waste; • Inert Type 2 waste; • Putrescible waste; • Special Type 1 waste; and • Other wastes that comply with the Class II criteria as defined in the Landfill Definitions.	
6.	Heavy Vehicle Refueling facility	• Vehicle refuelling to occur over concrete hardstand; • Potentially contaminated surface water to be collected in sumps and directed to the OWS and TRH concentrations of <15mg/L to be achieved for dust suppression; and • Spill response equipment available.	Schedule 1: Maps, Premises map, Figure 12 and Figure 13

Monitoring during environmental commissioning and time limited operations

20. The works approval holder must monitor emissions during environmental commissioning and time limited operations in accordance with Table 8.

Table 8: Emissions monitoring during commissioning and time limited operation

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit	Method	
						Sampling	Analysis
WFSF: Pit 1/2 Pit 3	MB13WARR003 MB13WARR012 MB13WARR013 MB13WARR016 MB17WARR0008 MB19WARR0001 + 4 new monitoring bores (Figure 15)	Surface water level	Monthly during time limited operations	Spot sample	Metres below ground level (mbgl)	AS/NZS 5667.1 AS/NZS 5667.11	In field non-NATA accredited analysis permitted
		pH			pH units		
		Electrical Conductivity (EC)			µS/cm		
		Dissolved Oxygen (DO)			mg/L		By a NATA accredited laboratory
		Total Hardness ($CaCO_3$)					
		Total Dissolved Solids (TDS)					
		Major Ions: Calcium Chloride Fluoride Potassium Magnesium Sodium Sulphate					
		Nutrients: Total Phosphorus Total Nitrogen Nitrogen as NO_2 Nitrogen as NO_3 Nitrogen as NH_4					
		Metals/ metalloids: Aluminium Antimony Arsenic Boron Barium Cadmium Chromium Cobalt Copper Iron Lead Mercury Manganese Molybdenum Nickel Selenium Silicon Silver Tin Uranium Zinc					
		Organic compound: Acrylamide					

Tailings (supernatant and fines)	New Processing Plant (Figure 1)	pH	Quarterly during time limited operations	Spot sample	pH units	AS/NZS 5667.1 AS/NZS 5667.11	In field non-NATA accredited analysis permitted
		EC[1]			µS/cm		
		TDS Acrylamide Aluminium Arsenic Barium Boron Calcium Carbonate Cadmium Calcium Chloride Chromium Copper Fluoride Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Nitrate Potassium Selenium Sodium Sulfate Zinc			mg/L		By a NATA accredited laboratory
Dewatering water discharged to Warramboo Creek	As per Figure 9	pH	Once during commissioning Monthly during time limited operations (if discharge is occurring).	Spot sample	pH units	AS/NZS 5667.1 AS/NZS 5667.11	In field non-NATA accredited analysis permitted
		EC			µS/cm		
Dewatering water discharged to Warramboo Creek	As per Figure 9	TDS Acrylamide Aluminium Arsenic Barium Boron Carbonate Cadmium Calcium Chloride Chromium Copper Fluoride Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Nitrate Potassium Selenium Sodium Sulfate Zinc	Once during commissioning Monthly during time limited operations (if discharge is occurring).	Spot sample	mg/L	AS/NZS 5667.1 AS/NZS 5667.11	By a NATA accredited laboratory

Specified Actions

21. The works approval holder must conduct leach testing of two saturated columns of representative waste fine/waste rock from the receiving Pit samples for a minimum period of 13 weeks during time limited operations. The leaching test methodology shall be representative of the anoxic conditions likely to be present at the WFSF and follow the protocol outlined in Watson *et al* 2016. The works approval holder shall analyse the concentrations of contaminants in the leachate and detail the methodology used, source of the samples and the results in a report.

22. Within 60 days of the preparation of the report required by condition 21 the works approval holder must submit the report to the CEO.

Inspections

23. The works approval holder must conduct visual inspections of the infrastructure during commissioning and time limited operations at the frequency specified in Table 9.

Table 9: Inspections of infrastructure

Infrastructure (refer to Schedule 1 Premises Plan)	Type of inspection	Frequency
Waste fines delivery pipelines	Integrity check/ loss of containment	daily
Waste fines decant water discharge pipelines		daily
WFSF Pit 1/2 embankment freeboard	To confirm required freeboard capacity is available	daily
Pit 3 Process Water Dam	To confirm required freeboard capacity is available	daily

Compliance reporting

24. The works approval holder must submit to the CEO a report on the time limited operations within 90 calendar days of the completion date of time limited operations or 90 calendar days before the expiration date of the works approval, whichever is the sooner.

25. The works approval holder must ensure the report required by condition 24 includes the following:

(a) A summary of the time limited operations, including timeframes and amount of iron ore processed;

(b) product produced;

(c) waste fines deposited;

(d) waste fines density (solid vs water content);

(e) water balance over the WFSF including any dewatering volume discharged and calculated seepage;

(f) Monitoring results recorded in accordance with conditions 10 and 20;

(g) Comparison of the data from conditions 10 and 20 with the ANZECC water quality default guideline values for 95% protection of freshwater aquatic ecosystems;

(h) a summary of the environmental performance of all plant and equipment as installed, which at minimum includes records detailing the:

(i) operations of the infrastructure; and

(ii) testing the infrastructure.

(i) a review of performance against the works approval; and

(j) where they have not been met, measures proposed to meet the manufacturer's design specification and conditions of this works approval, together with timescales for implementing the proposed measures.

Records and reporting (general)

26. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

27. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with conditions 1 and 2;

(b) any maintenance of infrastructure that is performed in the course of complying with conditions of this works approval;

(c) monitoring programmes undertaken in accordance with condition 20;

(d) visual inspections undertaken in accordance with condition 23; and

(e) complaints received under condition 26.

28. The books specified under condition 27 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 10 have the meanings defined.

Table 10: Definitions

Term	Definition
annual period	a 12 month period commencing from 1 January until 31 December of the immediately following year.
AS/NZS 5667.1	Australian/ New Zealand Standard 5667.1:1998 Water Quality- Sampling. Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples
AS/NZS 5667.11	Australian/ New Zealand Standard 5667.11:1998 Water Quality- Sampling. Part 11: Guidance on sampling of groundwaters
AS1940- 2004	Australian Standard 1940- 2004. The Storage and Handling of flammable and combustible liquids
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Clean Fill	has the meaning defined in Landfill Definitions
critical containment infrastructure	means the items of infrastructure listed in condition 2.
Critical Containment Infrastructure Report	means a report to satisfy the CEO that works of critical containment infrastructure have been constructed in accordance with the works approval.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works

Term	Definition
	approval.
EP Act	*Environmental Protection Act 1986* (WA).
GL	gigalitre
HVRF	Heavy Vehicle Refuelling Facility
Hyporheic	Means the region of sediment beneath and adjacent to a stream containing a mixture of local and regional groundwater and stream water
Inert Waste Type 1	has the meaning defined in Landfill Definitions
Inert Waste Type 2	has the meaning defined in Landfill Definitions
Landfill Definitions	means the document titled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer of the Department of Environment and Conservation as amended from time to time
mg/L	Means milligrams per litre
OWS	Oily Water Collection and Treatment System
pH	pH unit
prescribed premises	has the same meaning given to that term under the EP Act.
Putrescible Waste	has the meaning defined in Landfill Definitions
RL	Reference level
Special Waste Type 1	has the meaning defined in Landfill Definitions
SWL	Standing Water Level
tipping area	means the area of a landfill where waste is currently being disposed
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
µS/cm	Means microseimens per centimetre
waste	has the same meaning given to that term under the EP Act.
Watson et al. (2016)	Watson, A., Linklater, C. and Chapman, J., 2016. Backfilled pits - laboratory-scale tests for assessing impacts on groundwater quality. *Proceedings of the AusIMM Life of Mine Conference, Brisbane 28-30 September 2016*. The paper is available from web site https://www.srk.cn/sites/default/files/file/AWatson_BackfilledPits_2016_0.pdf.
WFSF	Waste fines storage facility, which is made up to Pit 1/2 and Pit 3
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).

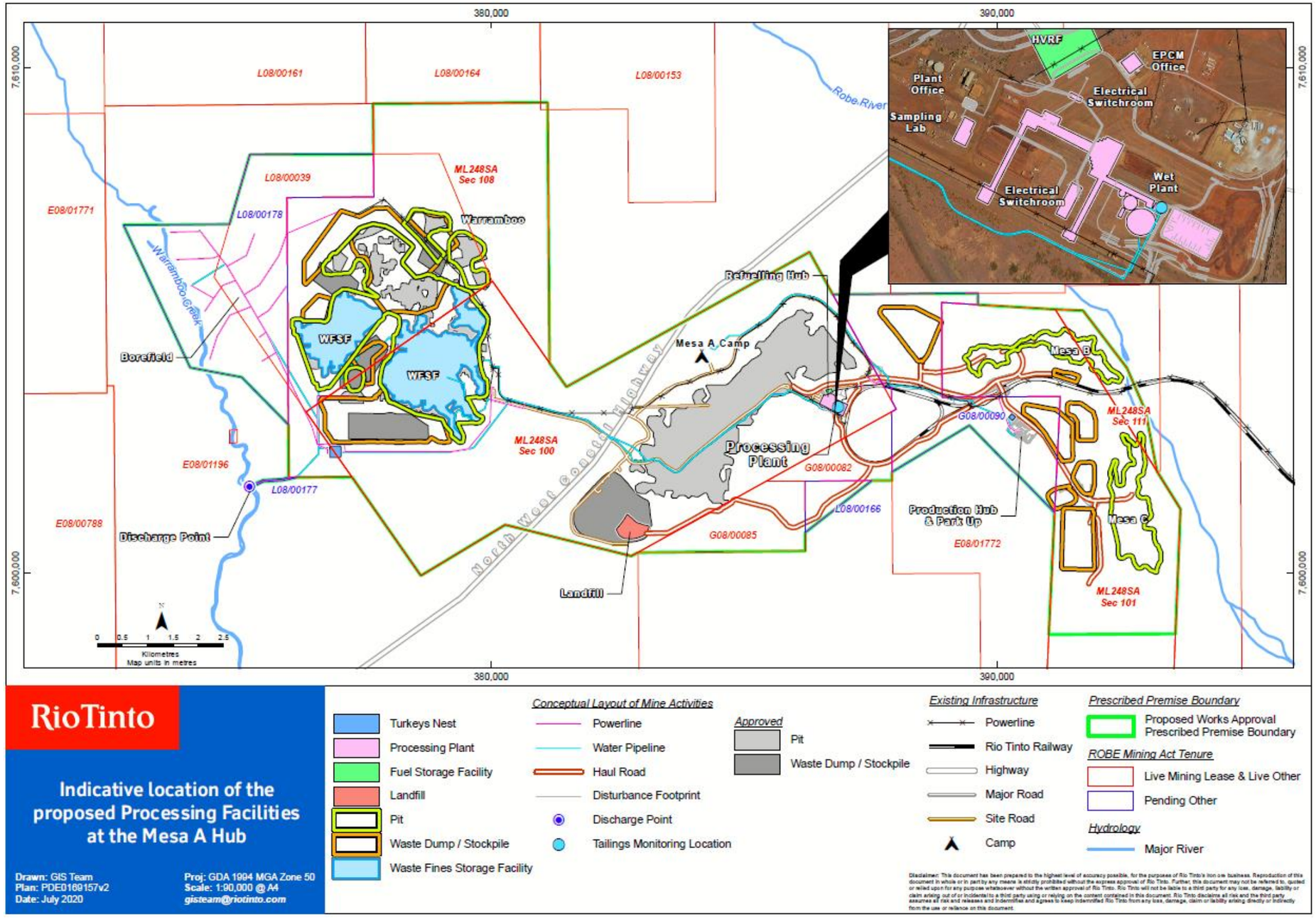


Figure 1: Map of the boundary of the prescribed premises at Mesa A/ Warramboo - proposed processing plant, dewatering discharge point and tailings sampling location.

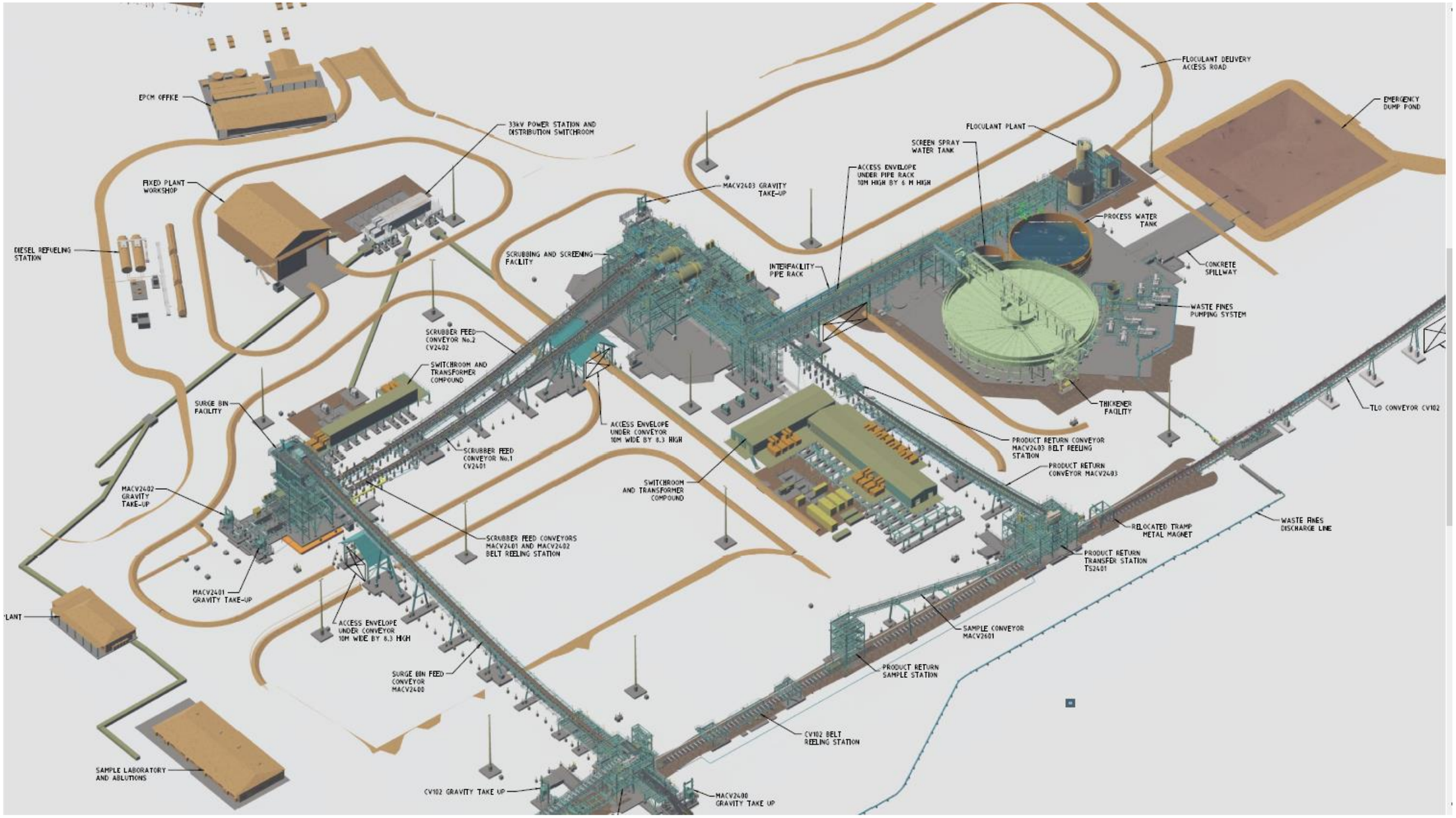


Figure 2: Site layout of the proposed ore processing facility (OPF) at Mesa A (concrete bunds and footings shown by grey shaded areas)

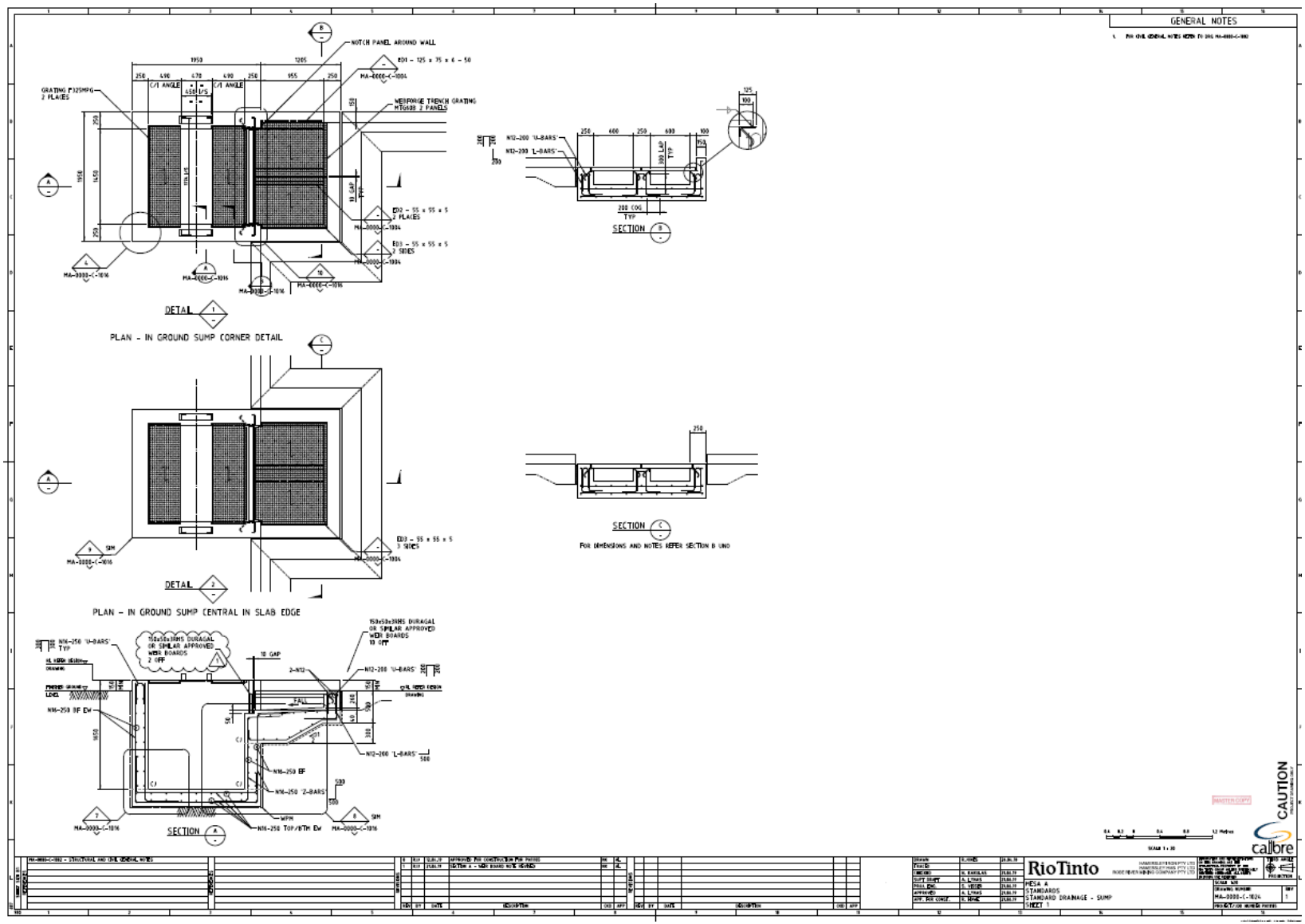


Figure 3: OPF Sump Design Detail (1 of 2)

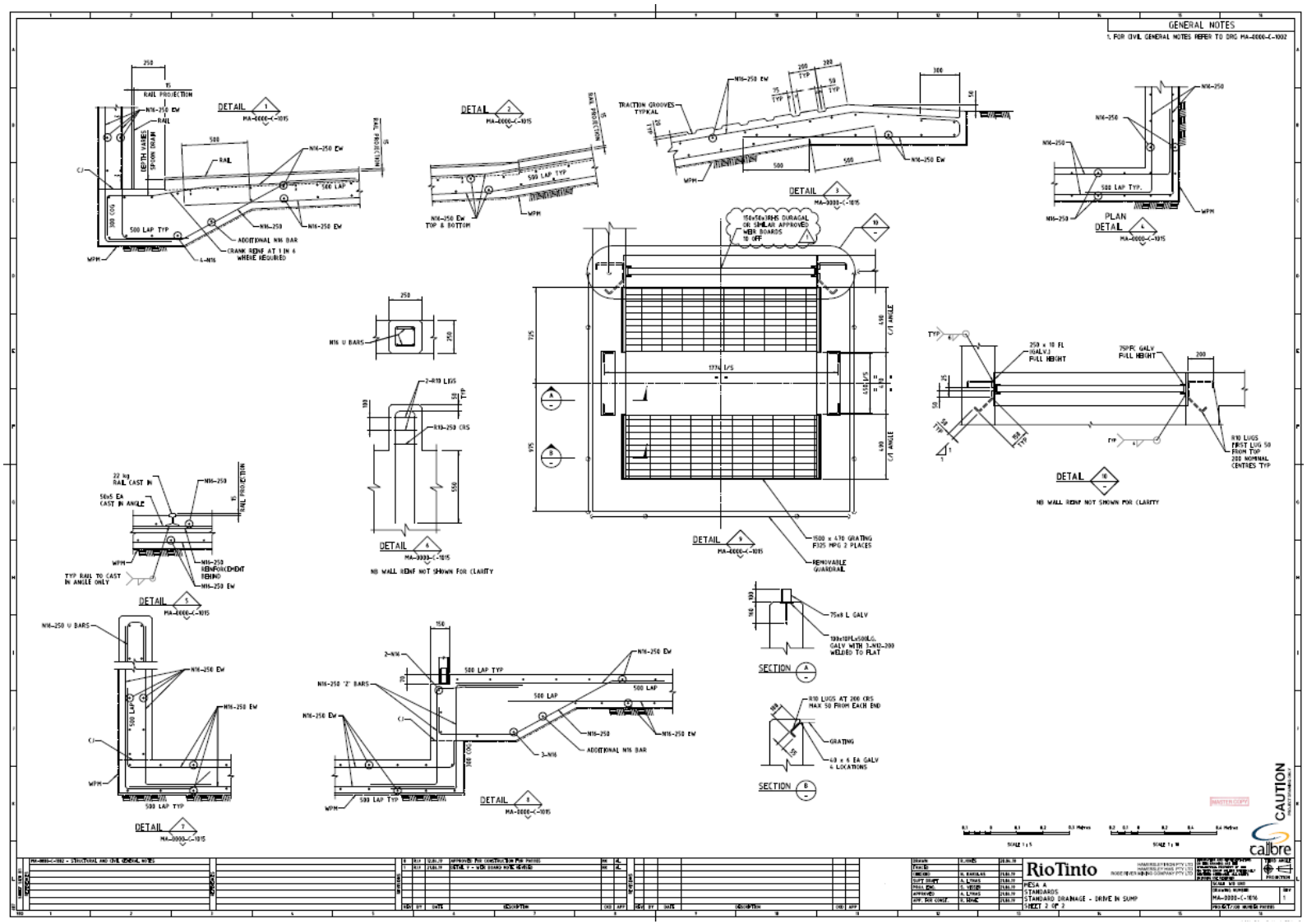


Figure 4: OPF Sump Design Detail (2 of 2)

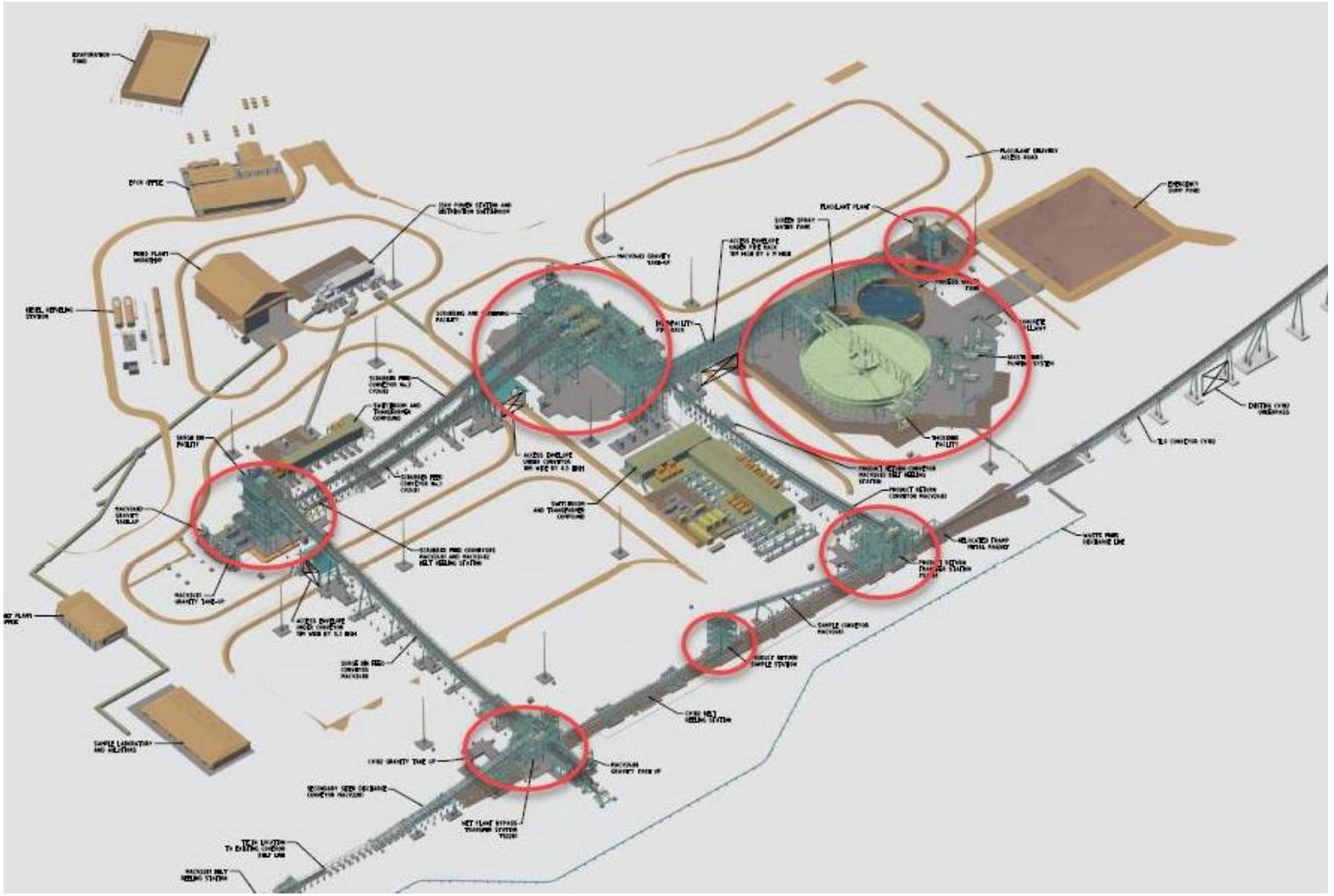


Figure 5: OPF Sump locations (indicated by red circles)

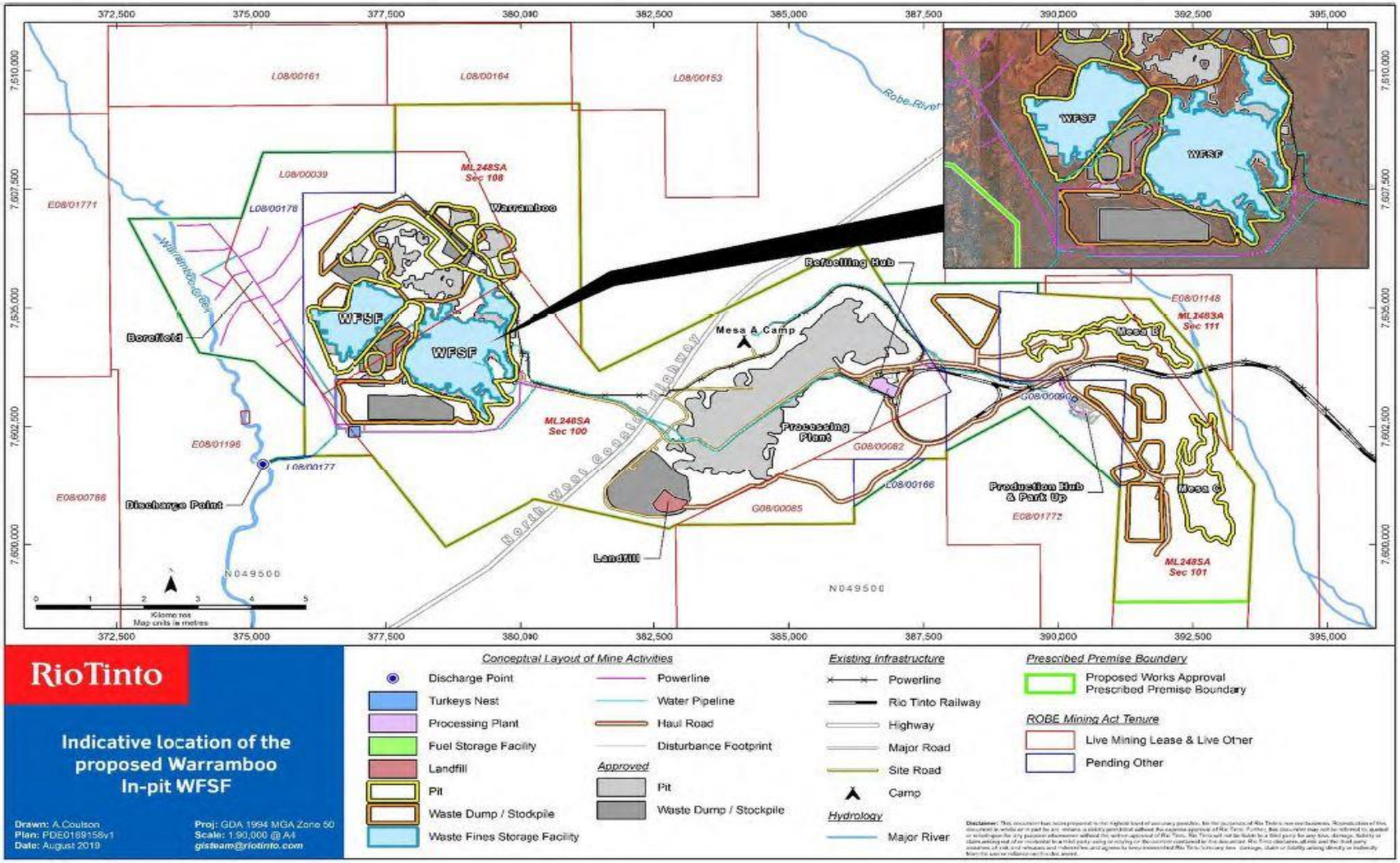


Figure 6: Location of the proposed WFSF at Warramboo

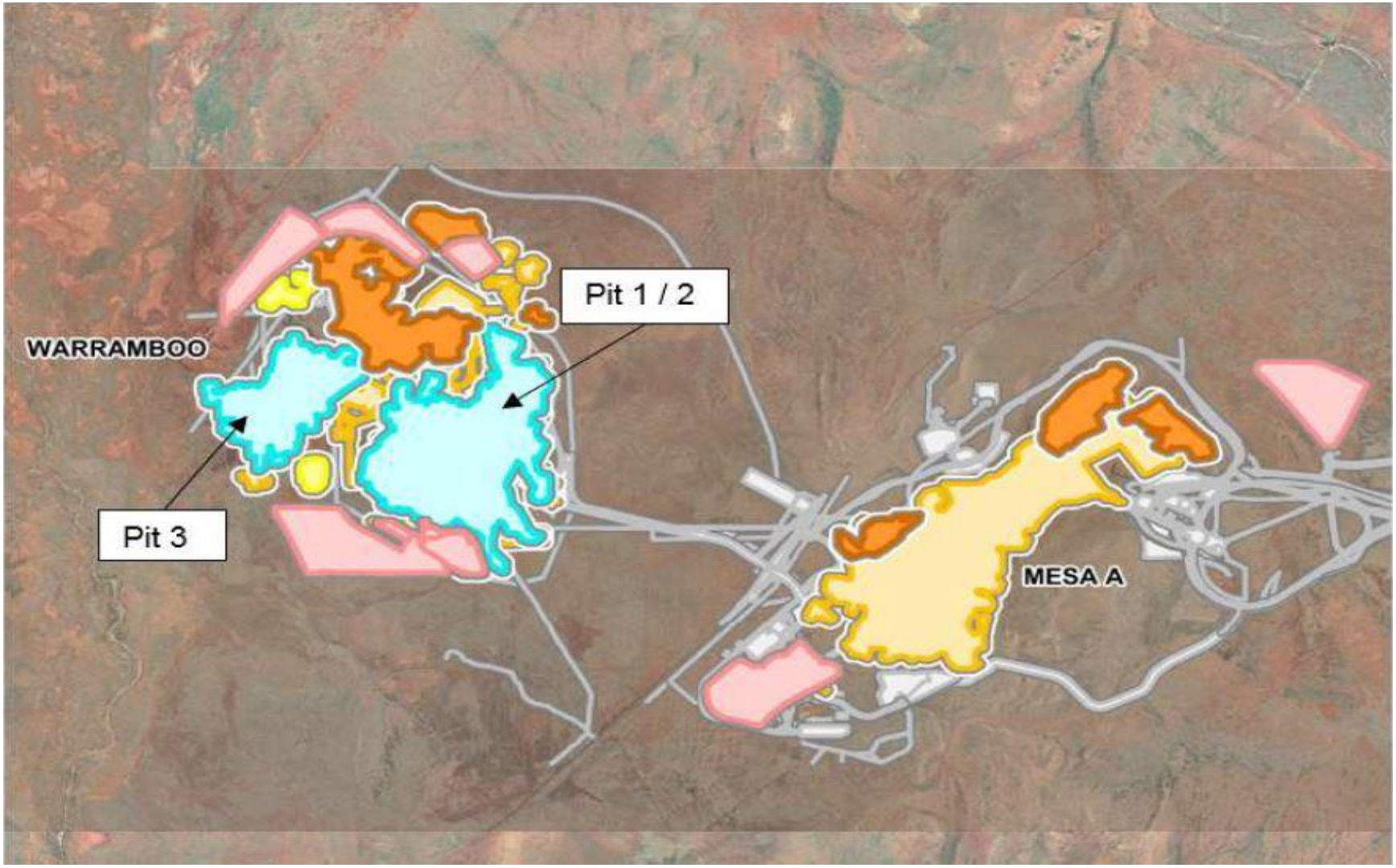
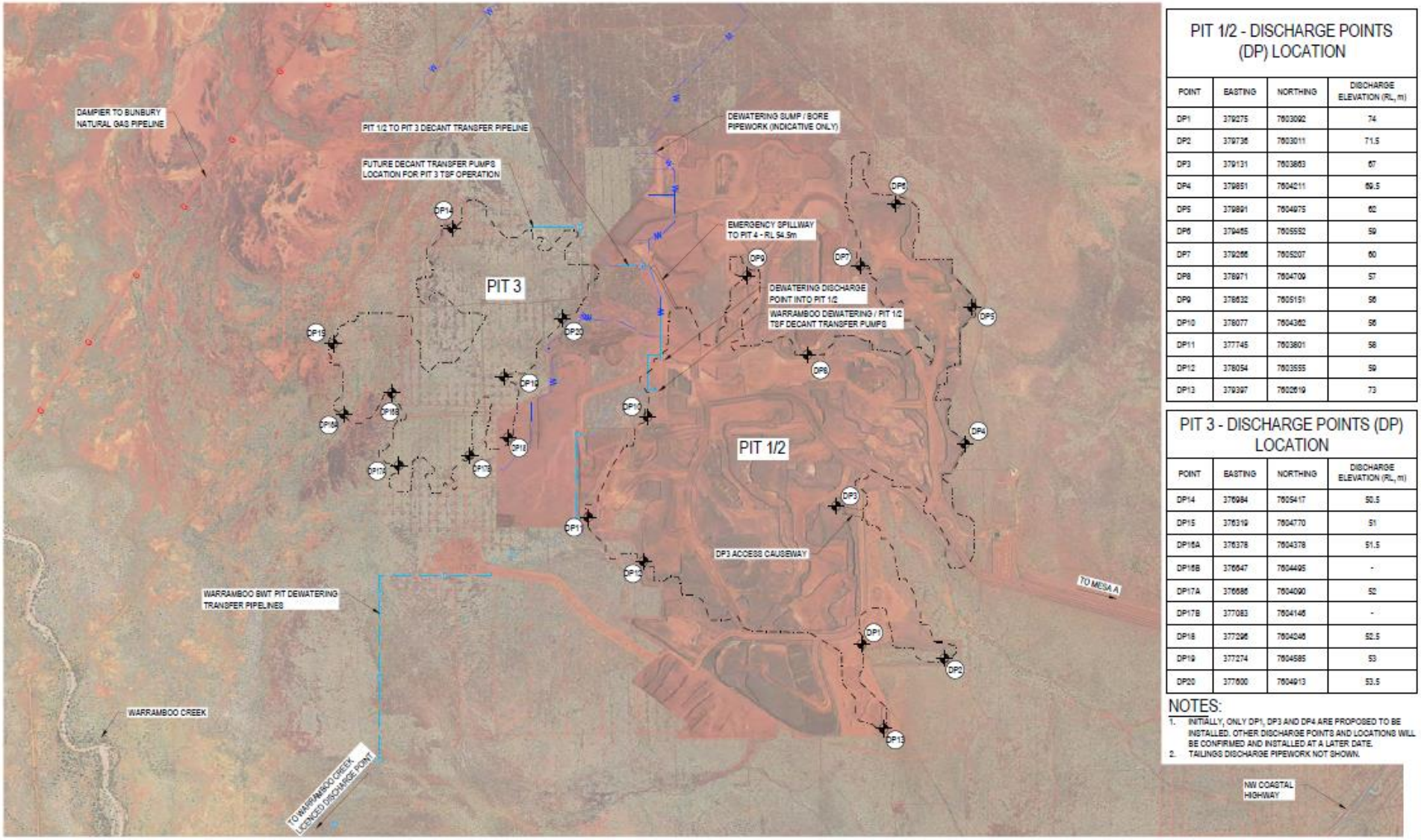


Figure 7: Site plan of the WFSF at Warramboo



PIT 1/2 - DISCHARGE POINTS (DP) LOCATION

POINT	EASTING	NORTHING	DISCHARGE ELEVATION (RL, m)
DP1	379275	7603092	74
DP2	379736	7603011	71.5
DP3	379131	7603863	67
DP4	379851	7604211	69.5
DP5	379891	7604975	62
DP6	379455	7605552	59
DP7	379266	7605207	60
DP8	378971	7604709	57
DP9	378632	7605151	56
DP10	378077	7604362	56
DP11	377745	7603601	58
DP12	378054	7603555	59
DP13	379397	7602619	73

PIT 3 - DISCHARGE POINTS (DP) LOCATION

POINT	EASTING	NORTHING	DISCHARGE ELEVATION (RL, m)
DP14	376984	7605417	50.5
DP15	376319	7604770	51
DP16A	376378	7604378	51.5
DP16B	376647	7604495	-
DP17A	376686	7604090	52
DP17B	377083	7604146	-
DP18	377296	7604246	52.5
DP19	377274	7604585	53
DP20	377600	7604913	53.5

NOTES:
1. INITIALLY, ONLY DP1, DP3 AND DP4 ARE PROPOSED TO BE INSTALLED. OTHER DISCHARGE POINTS AND LOCATIONS WILL BE CONFIRMED AND INSTALLED AT A LATER DATE.
2. TAILINGS DISCHARGE PIPEWORK NOT SHOWN.

Figure 8: WFSF and spigot layout at Warramboo

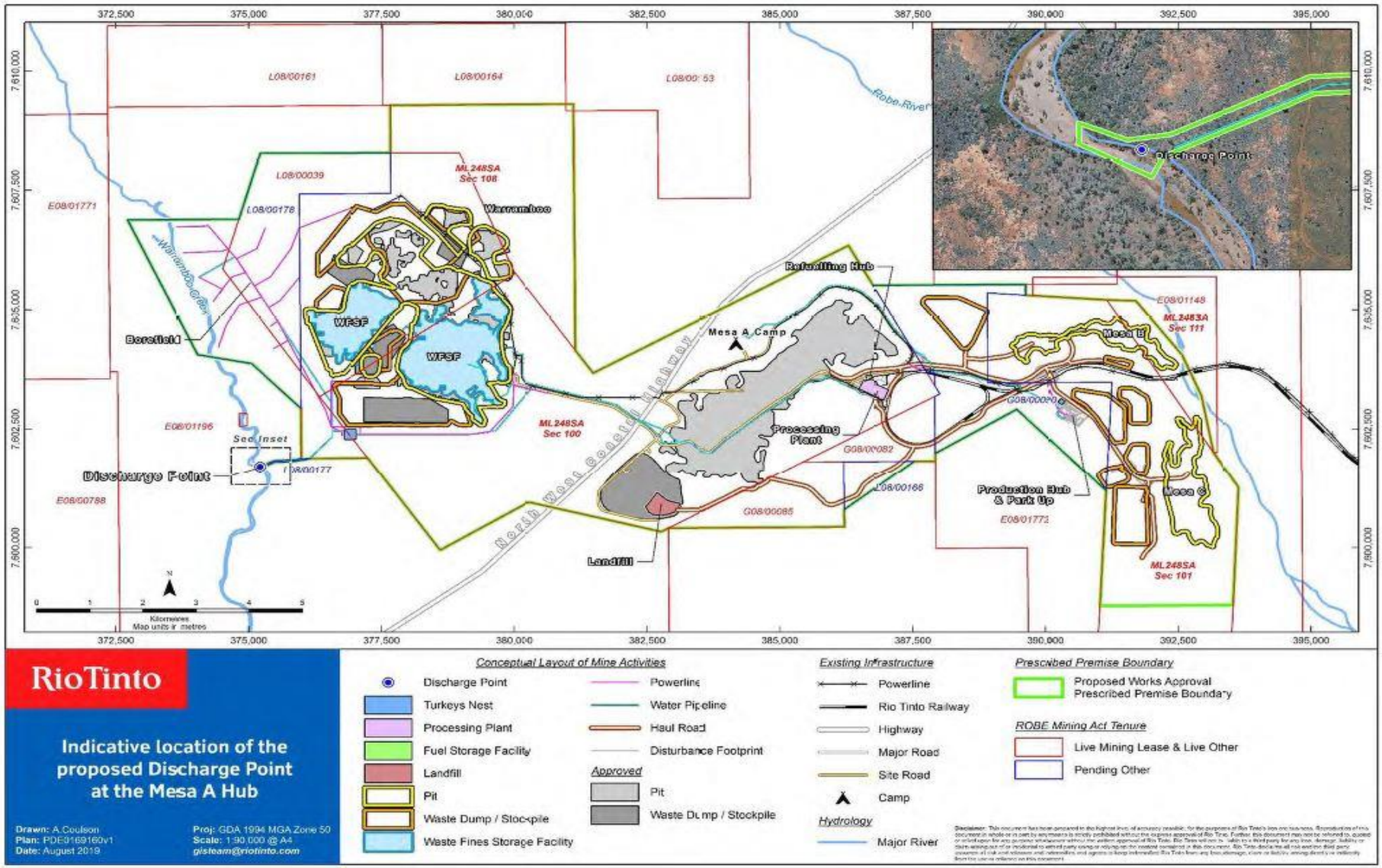


Figure 9: Location of the proposed mine dewatering discharge point into Warramboo Creek from Mesa A/ Warramboo

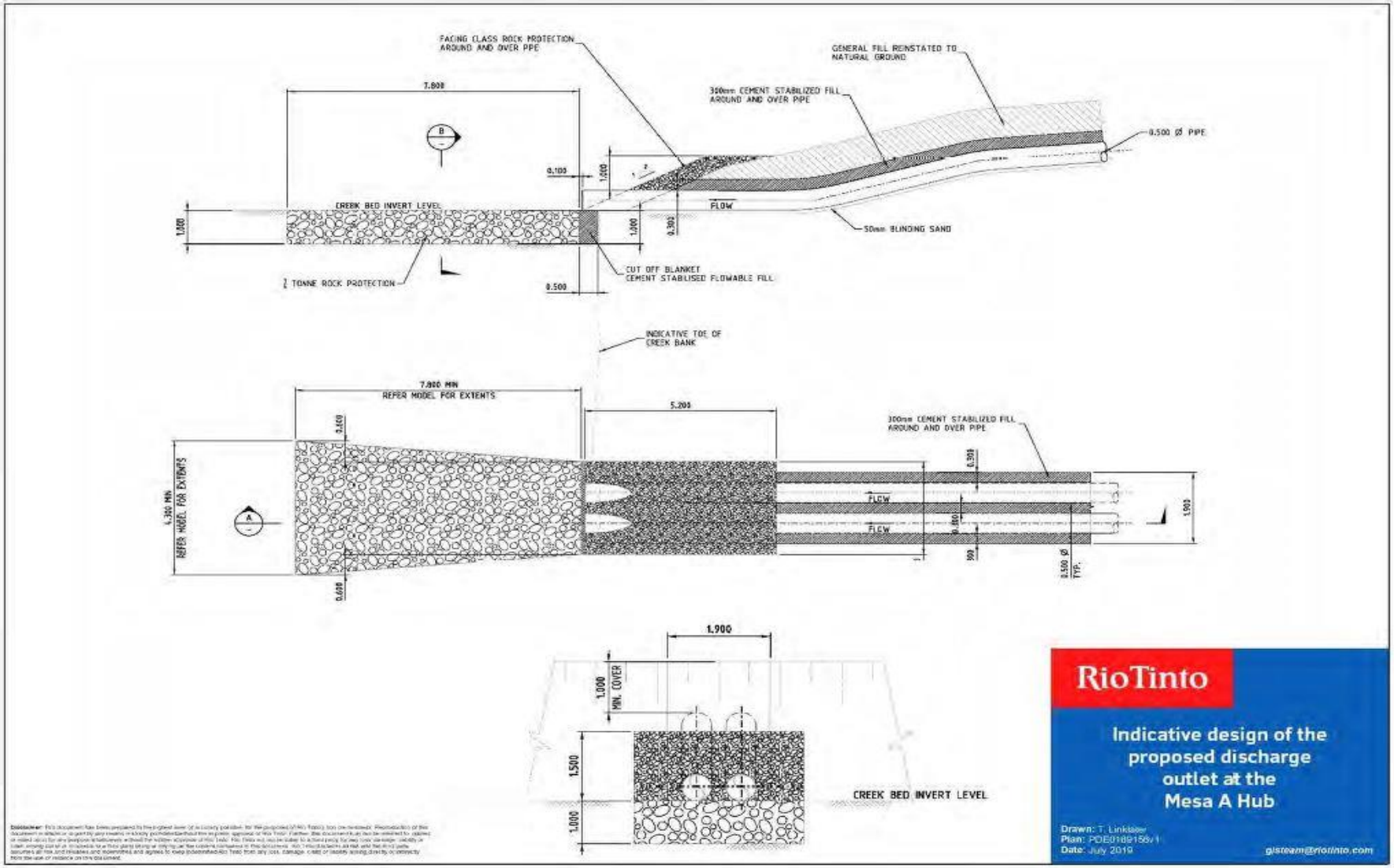


Figure 10: Design of the proposed discharge point at Warramboo

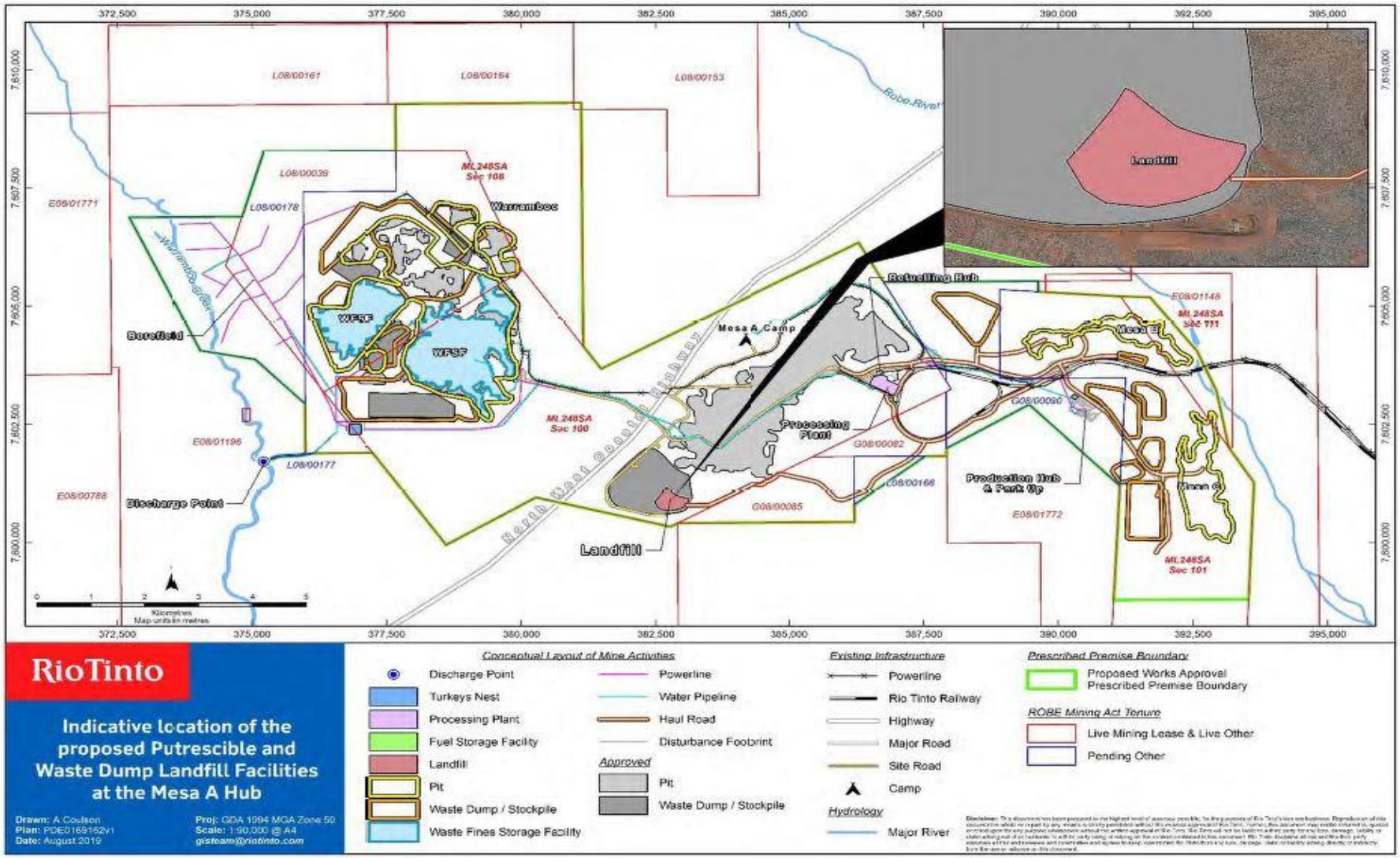


Figure 11: Location of the proposed waste dump landfill facility at Mesa A/Warramboo

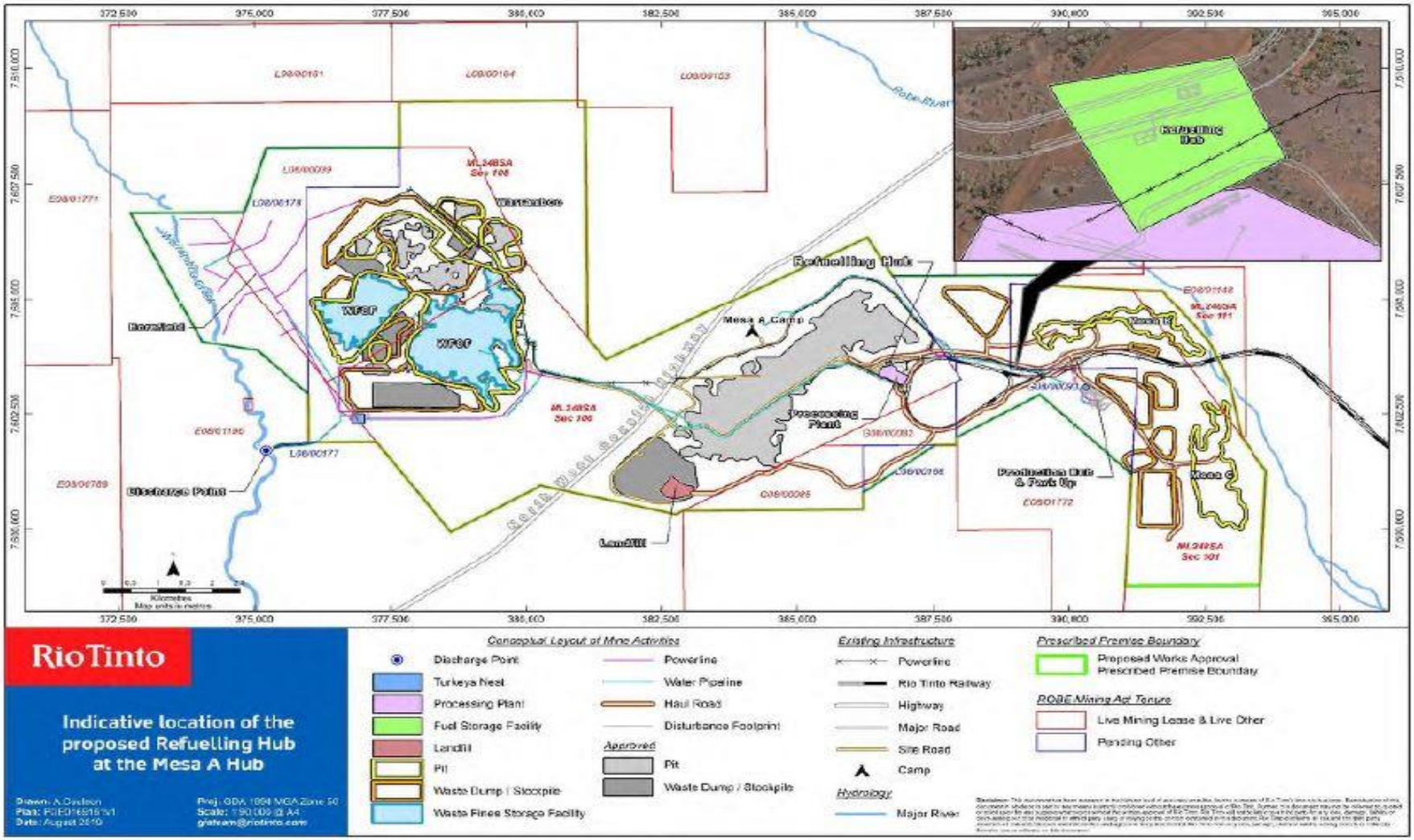


Figure 12: Location of the proposed heavy vehicle refueling facility at Mesa A/Warramboo

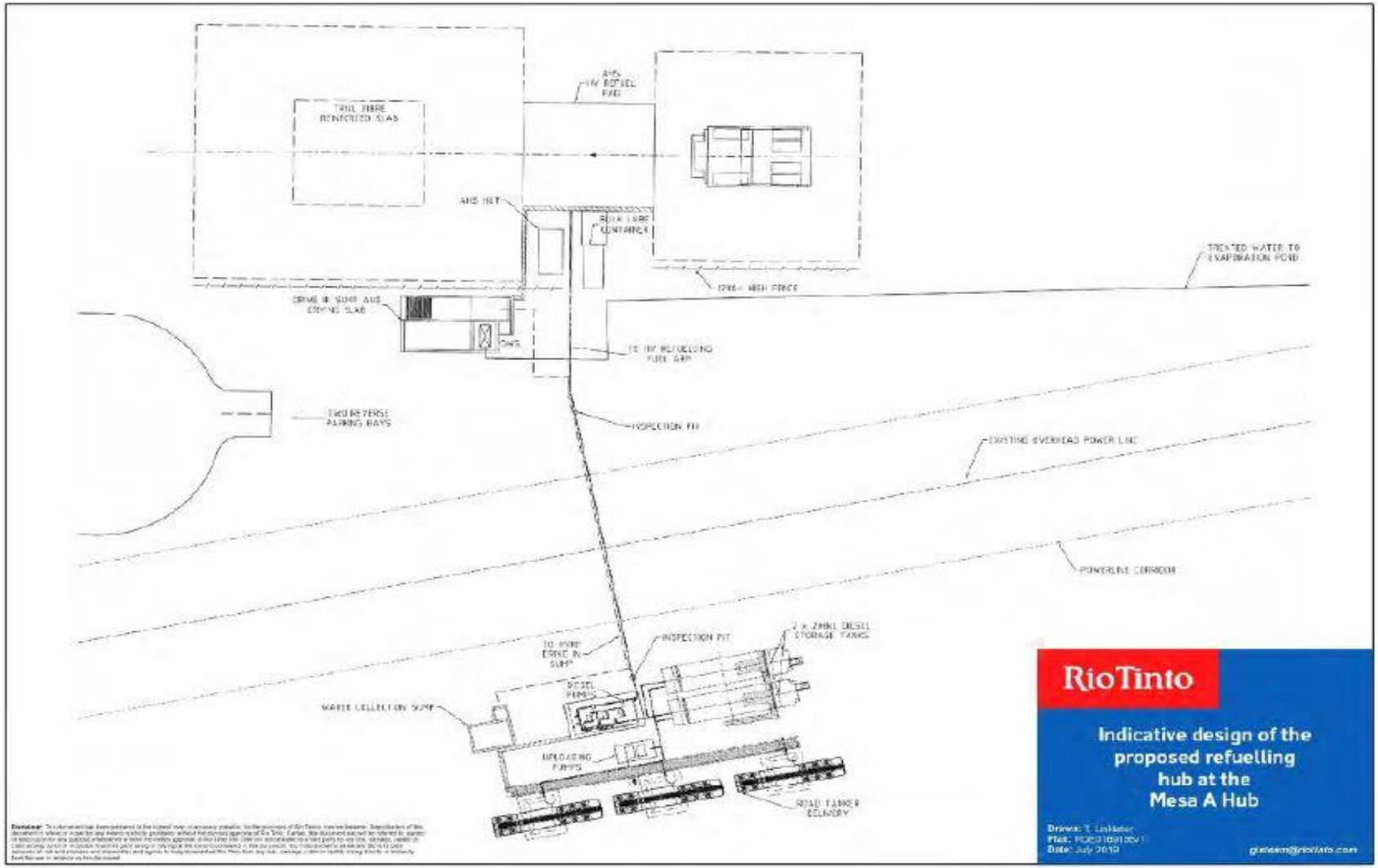


Figure 13: Design of the proposed heavy vehicle refueling facility at Mesa A/ Warramboo

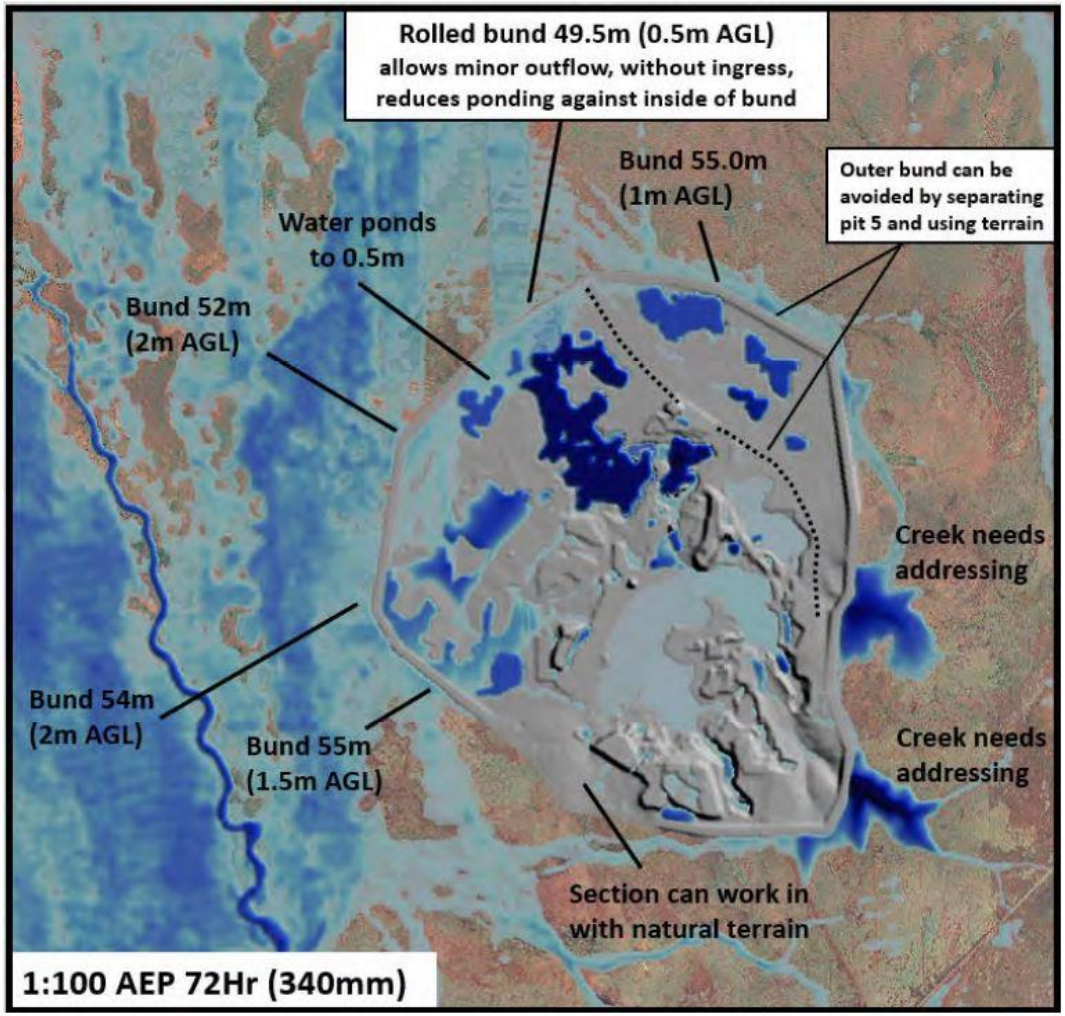


Figure 14: Location of the WFSF Pit 1/2 and Pit 3 Perimeter bund

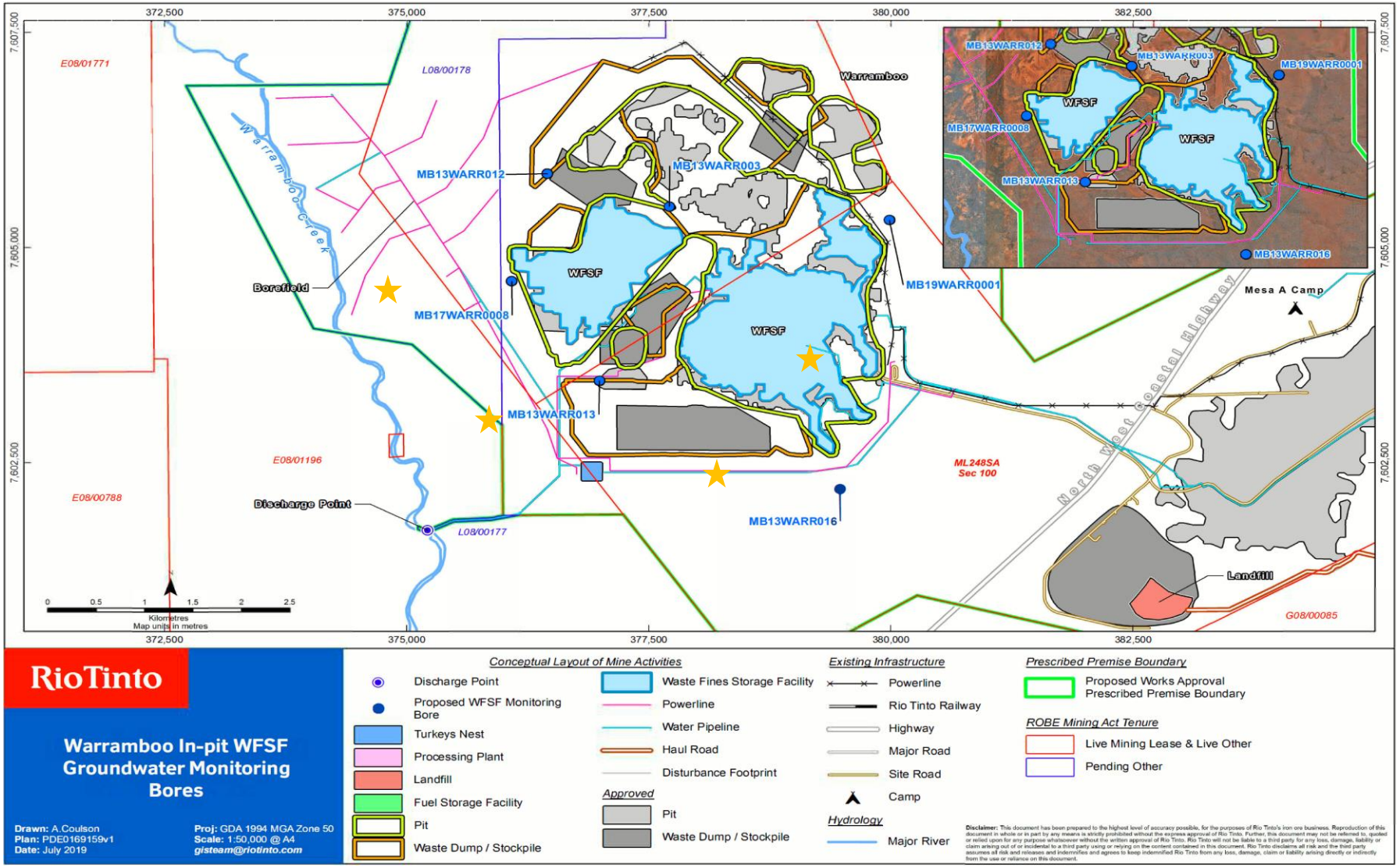


Figure 15: WFSF groundwater monitoring bores to be installed at Mesa A/Warramboo. Star symbol (★) represents new monitoring bores.

Schedule 2: Monitoring

Monitoring location	Parameter	Unit	Averaging period	Method	
				Sampling	Analysis
4 new Bores as per Figure 15 in Schedule 1	SWL (standing water level)	mbgl	Spot sample	AS/NZS 5667.1 AS/NZS 5667.11	In field
	pH	pH units	Spot sample	AS/NZS 5667.1 AS/NZS 5667.11	In field non NATA sampling permitted
	Electrical Conductivity (EC)	µS/cm			
	Dissolved Oxygen (DO)	mg/L			By a NATA accredited laboratory
	Total Hardness ($CaCO_3$)				
	Total Dissolved Solids (TDS)				
	Major Ions: Calcium Chloride Fluoride Potassium Magnesium Sodium Sulfate				
	Organic compound: Acrylamide				
	Nutrients: Total Phosphorus Total Nitrogen Nitrogen as NO_2 Nitrogen as NO_3 Nitrogen as NH_4				
4 new Bores as per Figure 15 in Schedule 1	Metals/metalloids: Aluminium Arsenic Antimony Boron Cadmium Cobalt Chromium Copper Iron Mercury Manganese Molybdenum Nickel Lead Selenium Tin Uranium Zinc				